

# HVR Series

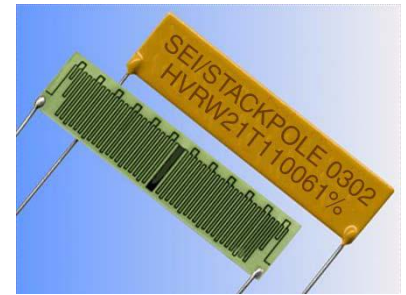
High Voltage Radial Leaded Plate Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

## Features:

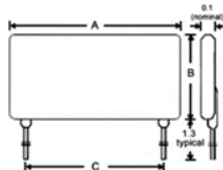
- Ohmic values available up to 50G
- Voltage ratings to 40K volts
- Ultra-high stability
- Tight tolerances to 0.1%
- Low VCR to 0.05 ppm/volt
- Very low noise
- Custom solutions available
- RoHS compliant, REACH compliant, and halogen free



## Electrical Specifications

| Case Size | Power Rating (W)<br>@ 75°C | Maximum Voltage Rating (KV) | TCR (ppm/°C) | Ohmic Range (Ω) and Tolerance |             |            |            |                  |
|-----------|----------------------------|-----------------------------|--------------|-------------------------------|-------------|------------|------------|------------------|
|           |                            |                             |              | 0.1%                          | 0.25%       | 0.5%       | 1%         | 2%, 5%, 10%, 20% |
| HVR(W)39  | 0.5                        | 2                           | ±25          | 1M - 100M                     | 1M - 100M   | 1M - 100M  | 1M - 100M  | 1M - 100M        |
|           |                            |                             | ±50          | 100K - 100M                   | 100K - 100M | 100K - 1G  | 100K - 1G  | 100K - 1G        |
|           |                            |                             | ±100         | 100K - 100M                   | 100K - 100M | 100K - 10G | 100K - 10G | 100K - 50G       |
|           |                            |                             | ±200         | 100K - 100M                   | 100K - 100M | 100K - 10G | 100M - 50G | 100M - 50G       |
| HVR(W)29  | 0.5                        | 4                           | ±25          | 1M - 100M                     | 1M - 100M   | 1M - 100M  | 1M - 100M  | 1M - 100M        |
|           |                            |                             | ±50          | 100K - 100M                   | 100K - 100M | 100K - 1G  | 100K - 1G  | 100K - 1G        |
|           |                            |                             | ±100         | 100K - 100M                   | 100K - 100M | 100K - 10G | 100K - 10G | 100K - 50G       |
|           |                            |                             | ±200         | 100K - 100M                   | 100K - 100M | 100K - 10G | 100M - 50G | 100M - 50G       |
| HVR(W)21  | 1                          | 10                          | ±25          | 1M - 100M                     | 1M - 500M   | 1M - 500M  | 1M - 500M  | 1M - 500M        |
|           |                            |                             | ±50          | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 10G | 100K - 10G       |
|           |                            |                             | ±100         | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 50G | 100K - 50G       |
|           |                            |                             | ±200         | 100K - 100M                   | 100K - 100M | 100M - 10G | 100M - 50G | 100M - 50G       |
| HVR(W)42  | 2                          | 20                          | ±25          | 1M - 100M                     | 1M - 500M   | 1M - 500M  | 1M - 500M  | 1M - 500M        |
|           |                            |                             | ±50          | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 10G | 100K - 10G       |
|           |                            |                             | ±100         | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 50G | 100K - 50G       |
|           |                            |                             | ±200         | 100K - 100M                   | 100K - 100M | 100M - 10G | 100M - 50G | 100M - 50G       |
| HVR(W)43  | 3                          | 30                          | ±25          | 1M - 100M                     | 1M - 500M   | 1M - 500M  | 1M - 500M  | 1M - 500M        |
|           |                            |                             | ±50          | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 10G | 100K - 10G       |
|           |                            |                             | ±100         | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 50G | 100K - 50G       |
|           |                            |                             | ±200         | 100K - 100M                   | 100K - 100M | 100M - 10G | 100M - 50G | 100M - 50G       |
| HVR(W)56  | 6                          | 40                          | ±25          | 1M - 100M                     | 1M - 500M   | 1M - 500M  | 1M - 500M  | 1M - 500M        |
|           |                            |                             | ±50          | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 10G | 100K - 10G       |
|           |                            |                             | ±100         | 100K - 100M                   | 100K - 500M | 100K - 10G | 100K - 50G | 100K - 50G       |
|           |                            |                             | ±200         | 100K - 100M                   | 100K - 100M | 100M - 10G | 100M - 50G | 100M - 50G       |

### Mechanical Specifications

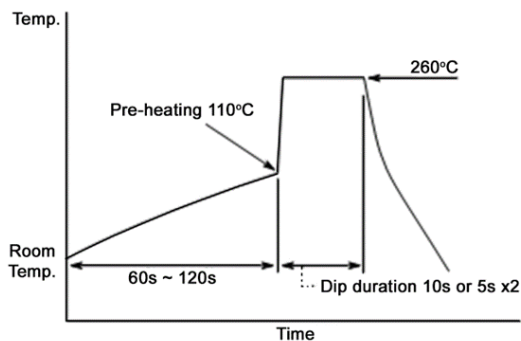


| Size     | A                              | B                             | C              | Unit         |
|----------|--------------------------------|-------------------------------|----------------|--------------|
| HVR(W)39 | 0.300 ± 0.080<br>7.62 ± 2.03   | 0.400 ± 0.030<br>10.16 ± 0.76 | 0.200<br>5.08  | inches<br>mm |
| HVR(W)29 | 0.500 ± 0.080<br>12.70 ± 2.03  | 0.375 ± 0.030<br>9.53 ± 0.76  | 0.400<br>10.16 | inches<br>mm |
| HVR(W)21 | 1.000 ± 0.080<br>25.40 ± 2.03  | 0.375 ± 0.030<br>9.53 ± 0.76  | 0.900<br>22.86 | inches<br>mm |
| HVR(W)42 | 2.000 ± 0.080<br>50.80 ± 2.03  | 0.500 ± 0.030<br>12.70 ± 0.76 | 1.900<br>48.26 | inches<br>mm |
| HVR(W)43 | 3.000 ± 0.080<br>76.20 ± 2.03  | 0.500 ± 0.030<br>12.70 ± 0.76 | 2.900<br>73.66 | inches<br>mm |
| HVR(W)56 | 4.000 ± 0.080<br>101.60 ± 2.03 | 0.750 ± 0.030<br>19.05 ± 0.76 | 3.900<br>99.06 | inches<br>mm |

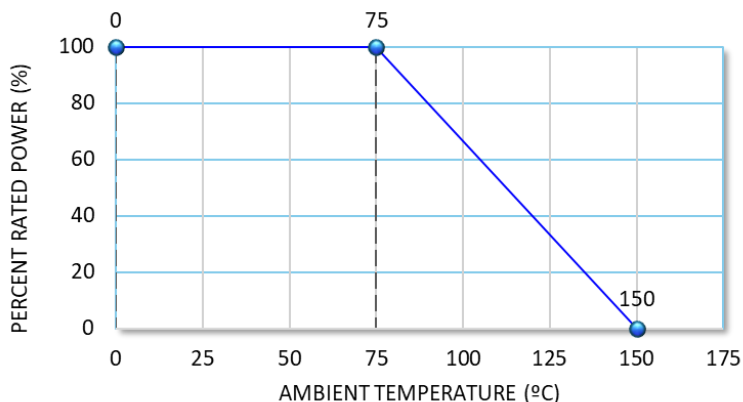
### Recommended Soldering Condition

- Flow Soldering:
- Pre-heating: 110°C MAX
  - Peak temperature/duration: 260°C within 10 seconds (1<sup>st</sup>, 2<sup>nd</sup> wave total)
  - Temperature profile (see chart on the right)

- Iron Soldering:
- 380°C, 5 seconds, once/terminal



### Power Derating Curve:



### RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

| RoHS Compliance Status  |                                           |                            |                                |                                   |                                                    |                                       |
|-------------------------|-------------------------------------------|----------------------------|--------------------------------|-----------------------------------|----------------------------------------------------|---------------------------------------|
| Standard Product Series | Description                               | Package / Termination Type | Standard Series RoHS Compliant | Lead-Free Termination Composition | Lead-Free Mfg. Effective Date (Std Product Series) | Lead-Free Effective Date Code (YY/WW) |
| HVR                     | High Voltage Radial Leaded Plate Resistor | Radial Special             | YES <sup>(1)</sup>             | 100% Matte Sn                     | Always                                             | Always                                |

Note (1): RoHS compliant by means of exemption 7c-l.

### "Conflict Metals" Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

### Compliance to "REACH"

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, "The Registration, Evaluation, Authorization and Restriction of Chemicals", otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

### Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

### How to Order

| Product Series |                                           | Lead Style |                    | Power Rating |     | Tolerance |       | TCR  |     | Resistance Value                                                |  |
|----------------|-------------------------------------------|------------|--------------------|--------------|-----|-----------|-------|------|-----|-----------------------------------------------------------------|--|
| Code           | Description                               | Code       | Description        | Code         | W   | Code      | Tol   | Code | ppm | Four characters with the multiplier used as the decimal holder. |  |
| HVR            | High Voltage Radial Leaded Plate Resistor | W          | 100% matte Sn lead | 39           | 0.5 | B         | 0.1%  | E    | 25  | 30 Mohm = 30M0                                                  |  |
|                |                                           |            |                    | 29           | 0.5 | C         | 0.25% | C    | 50  | 100 Mohm = 100M                                                 |  |
|                |                                           |            |                    | 21           | 1   | D         | 0.5%  | D    | 100 | 2 Gohm = 2G00                                                   |  |
|                |                                           |            |                    | 42           | 2   | F         | 1%    | L    | 200 |                                                                 |  |
|                |                                           |            |                    | 43           | 3   | G         | 2%    |      |     |                                                                 |  |
|                |                                           |            |                    | 56           | 6   | J         | 5%    |      |     |                                                                 |  |
|                |                                           |            |                    |              |     | K         | 10%   |      |     |                                                                 |  |
|                |                                           |            |                    |              |     | M         | 20%   |      |     |                                                                 |  |